Metro Transportation Plan Technical Analysis

Bloomington/Monroe County Metropolitan Planning Organization

Presented by: The Corradino Group

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Introduction

Topics for Today's Meeting

- Brief review of Model Update
- Model application capabilities
- MTP land use forecast scenarios
- MTP transportation scenarios
- Performance measurement
- Evaluating scenarios

Model Update

Major Highlights

- Update of base land use (Census 2010)
- Network and zonal changes for transit and non-motorized
- New household classifications/market segmentation
- New trip rates
- New destination choice methodology
- Added dynamic mode choice
- Consideration of parking
- Update of truck model
- Update of external travel and I-69 through trips

Model Update

Data Collection

- On-line household survey
- National household travel survey
- On-board transit survey
- Traffic counts
- Transit ridership

Model Update

Validation Measures

- Trips per household compared to other metro areas
- Travel patterns, model vs. survey
- Mode choices, model vs. survey
- Auto traffic, model vs. counts
- Truck traffic, model vs. counts
- Sensitivity testing

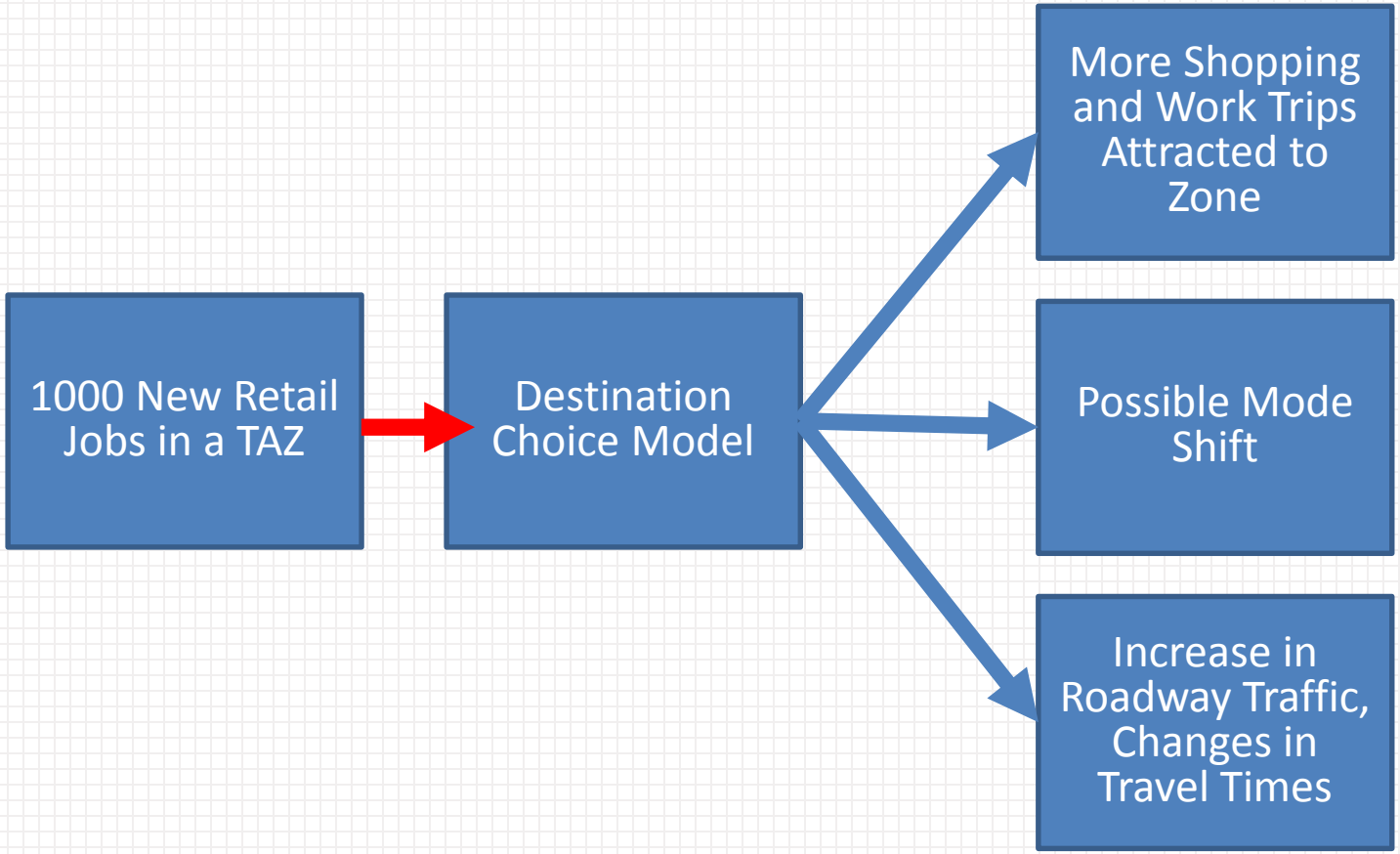
Model Application Capabilities

Potential Evaluations

- Response to land use changes
- Response to network changes
- Response to transit service changes

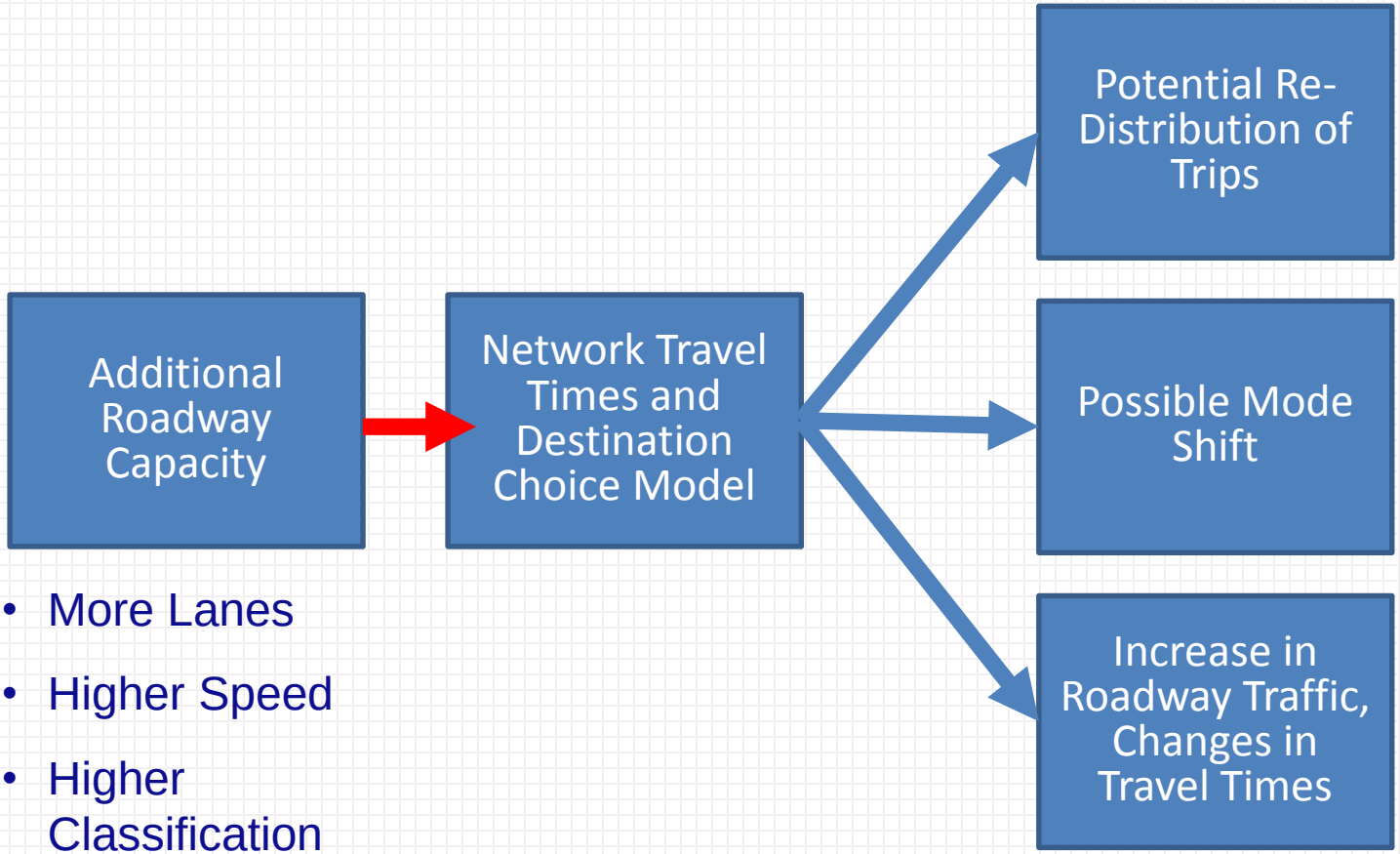
Model Application Capabilities

Example: Response to land use changes



Model Application Capabilities

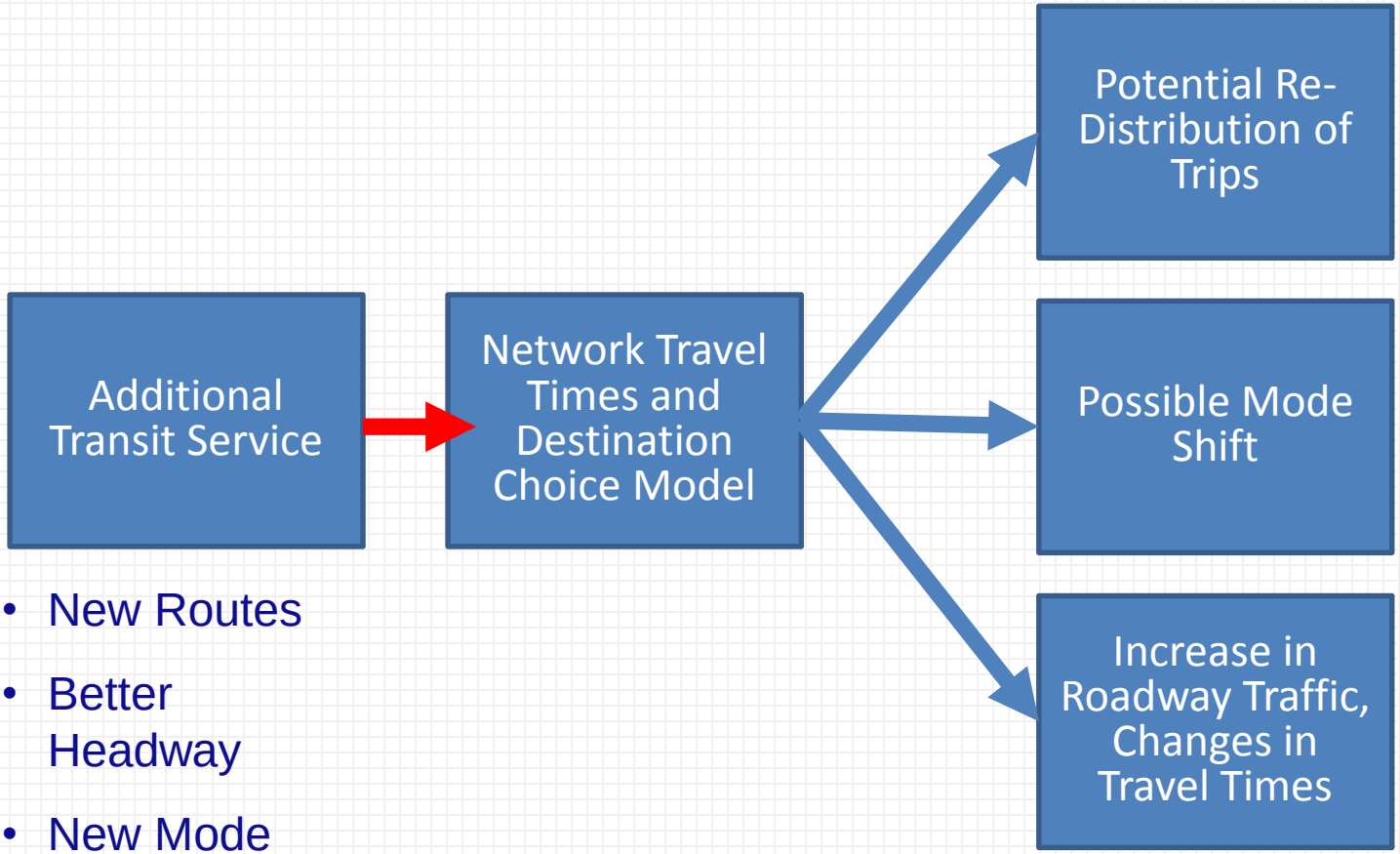
Example: Response to network changes



- More Lanes
- Higher Speed
- Higher Classification

Model Application Capabilities

Example: Response to transit service changes



- New Routes
- Better Headway
- New Mode (BRT)

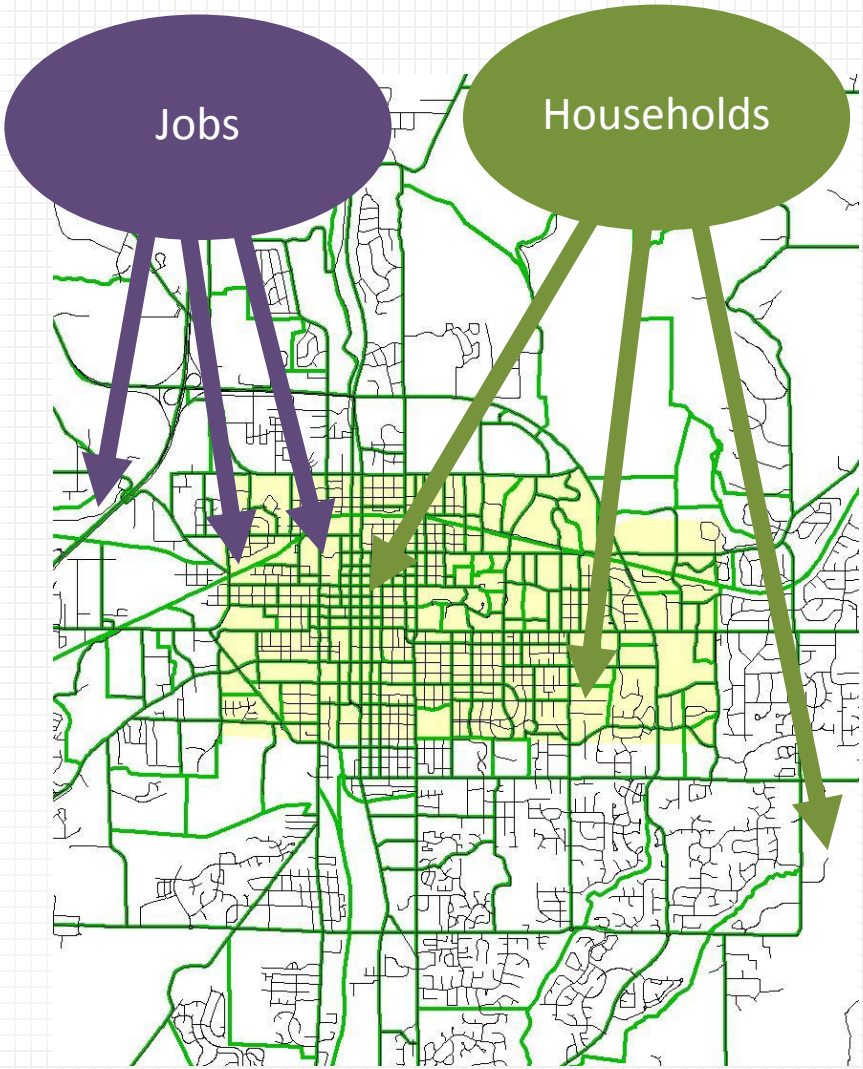
Scenario Development

Overall Growth Forecasting

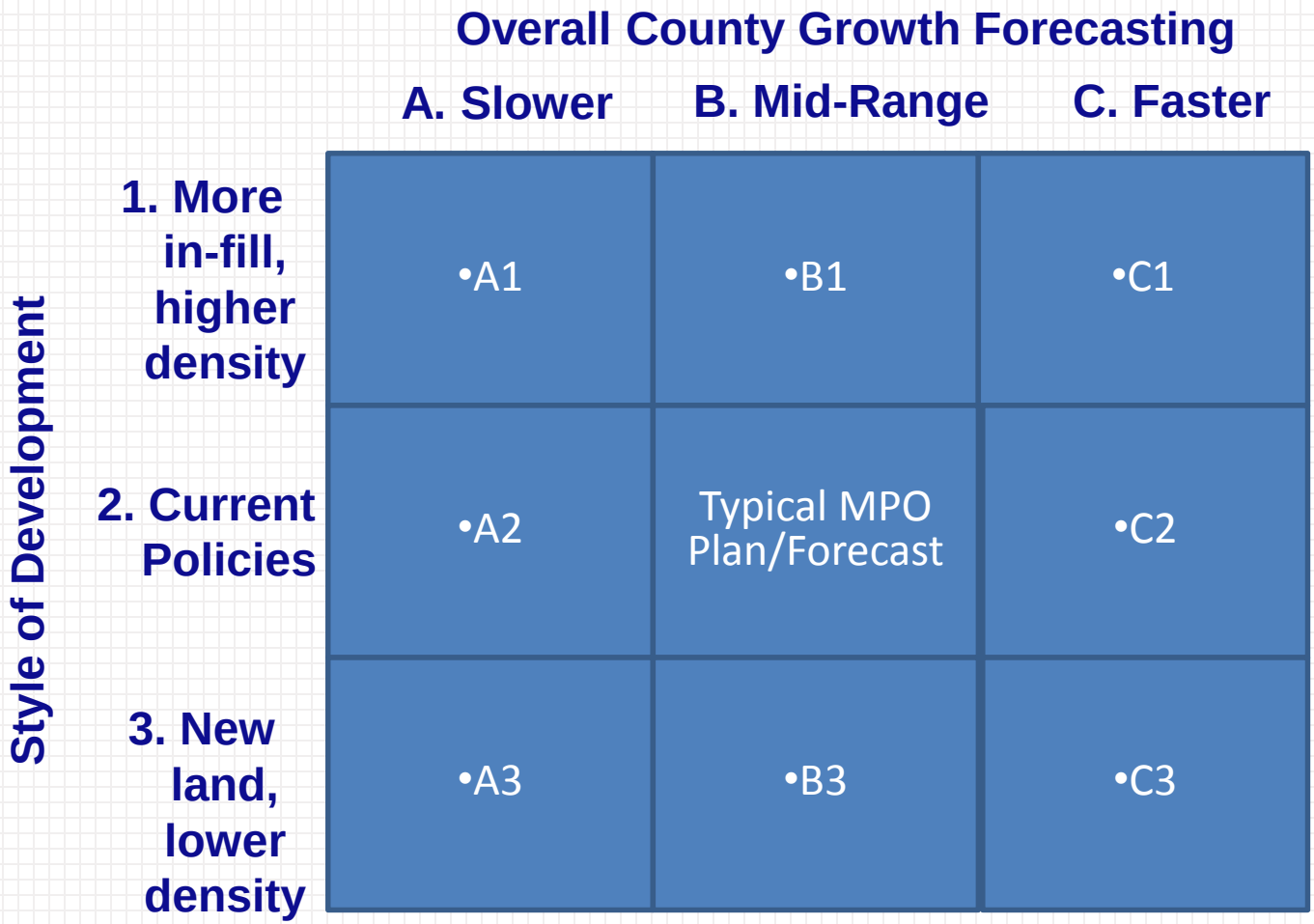
- Historical growth trends
- Economic drivers
- County household and population forecast
- County employment forecast by sector
- Range of choices

Growth Allocation

- Depends on land use policies
- Allocation process takes overall growth and applies policies



Scenario Development



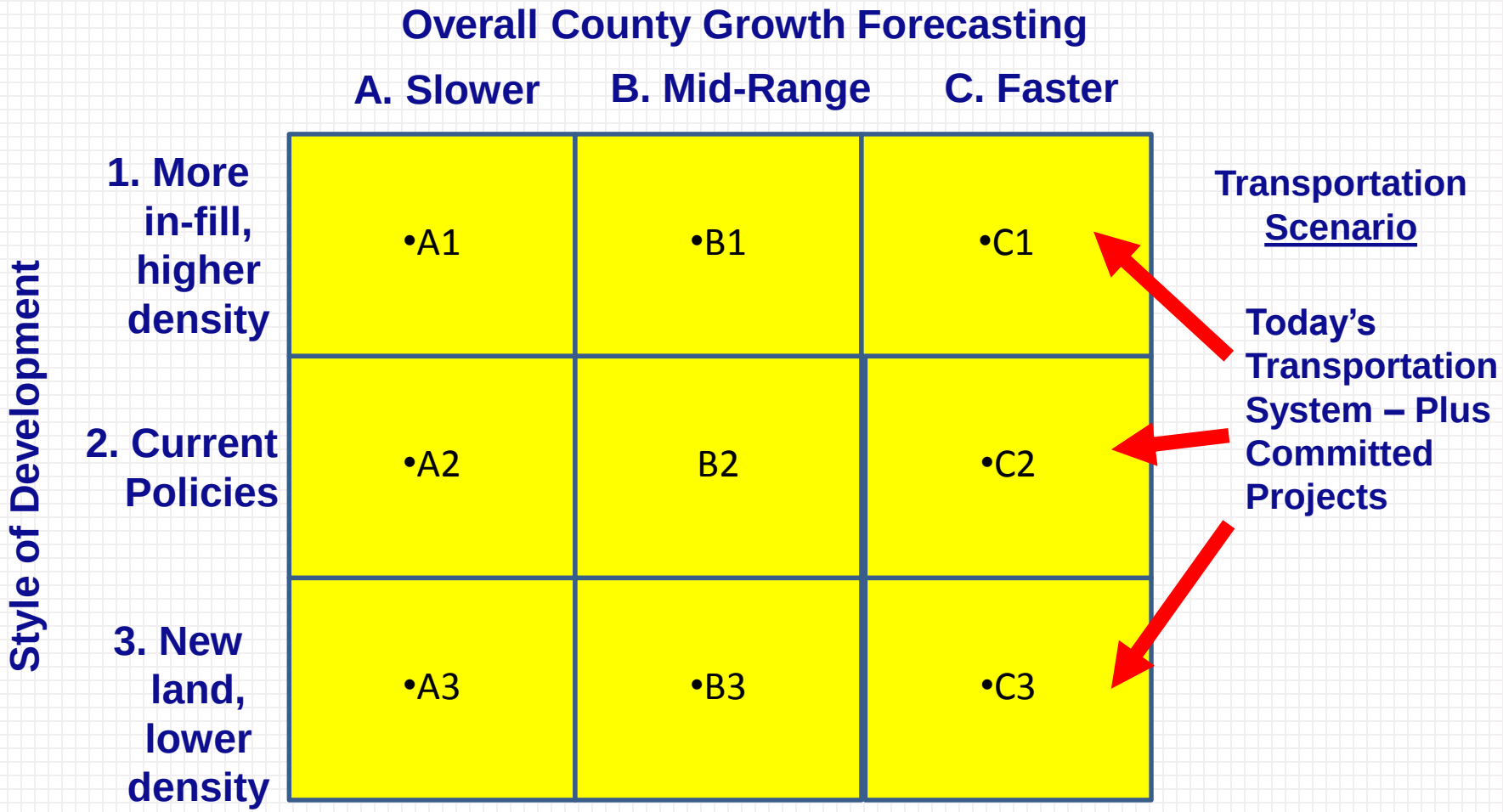
Scenario Testing

Infrastructure Scenarios

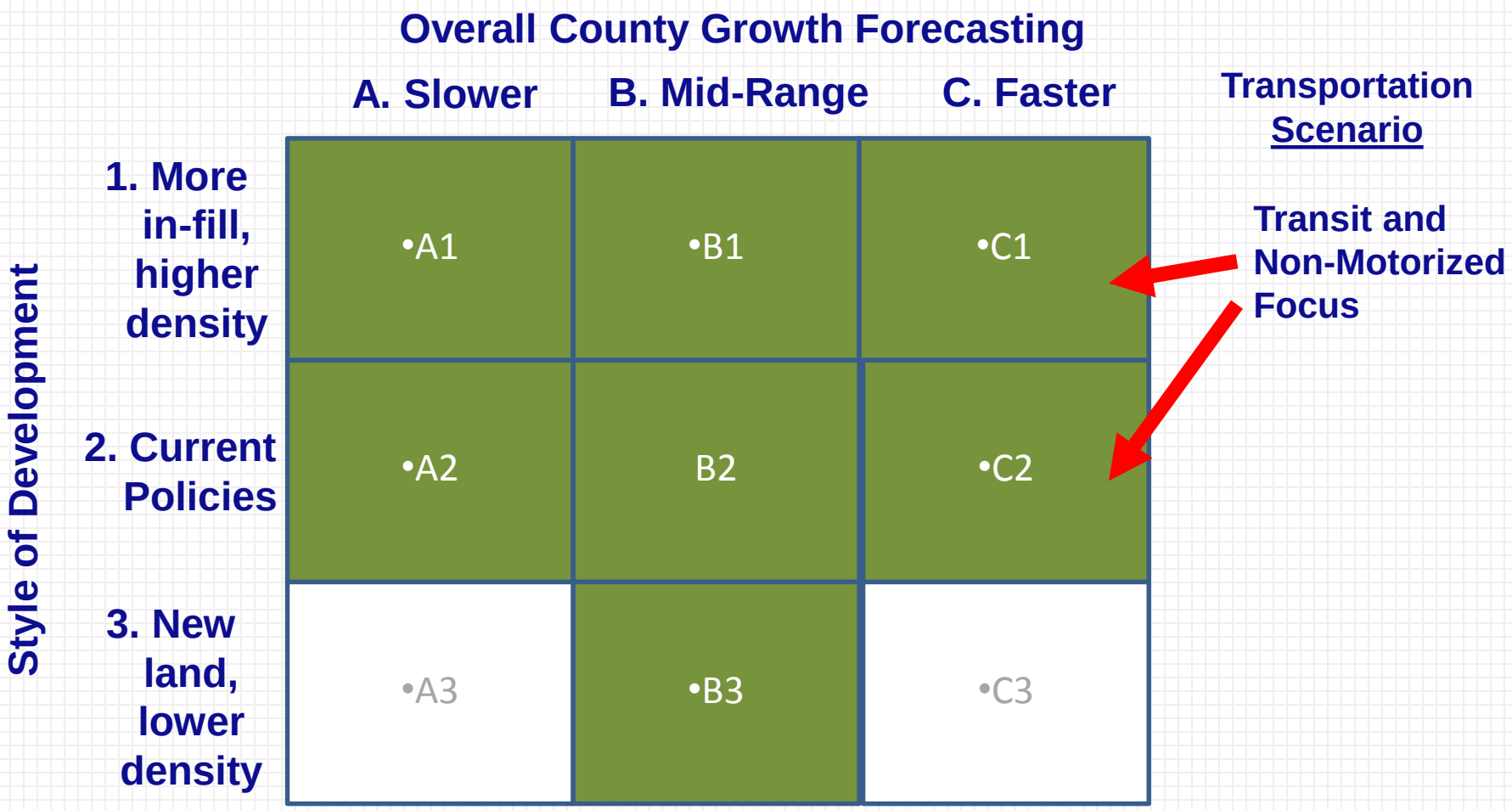
- Existing conditions (Base Year 2013)
- Existing conditions plus committed projects (E+C) *** All are compared to this**
- Auto-oriented investment focus
- Balanced investment focus
- Transit-oriented investment focus
- Bike-Pedestrian oriented investment focus

Network Alternative Testing

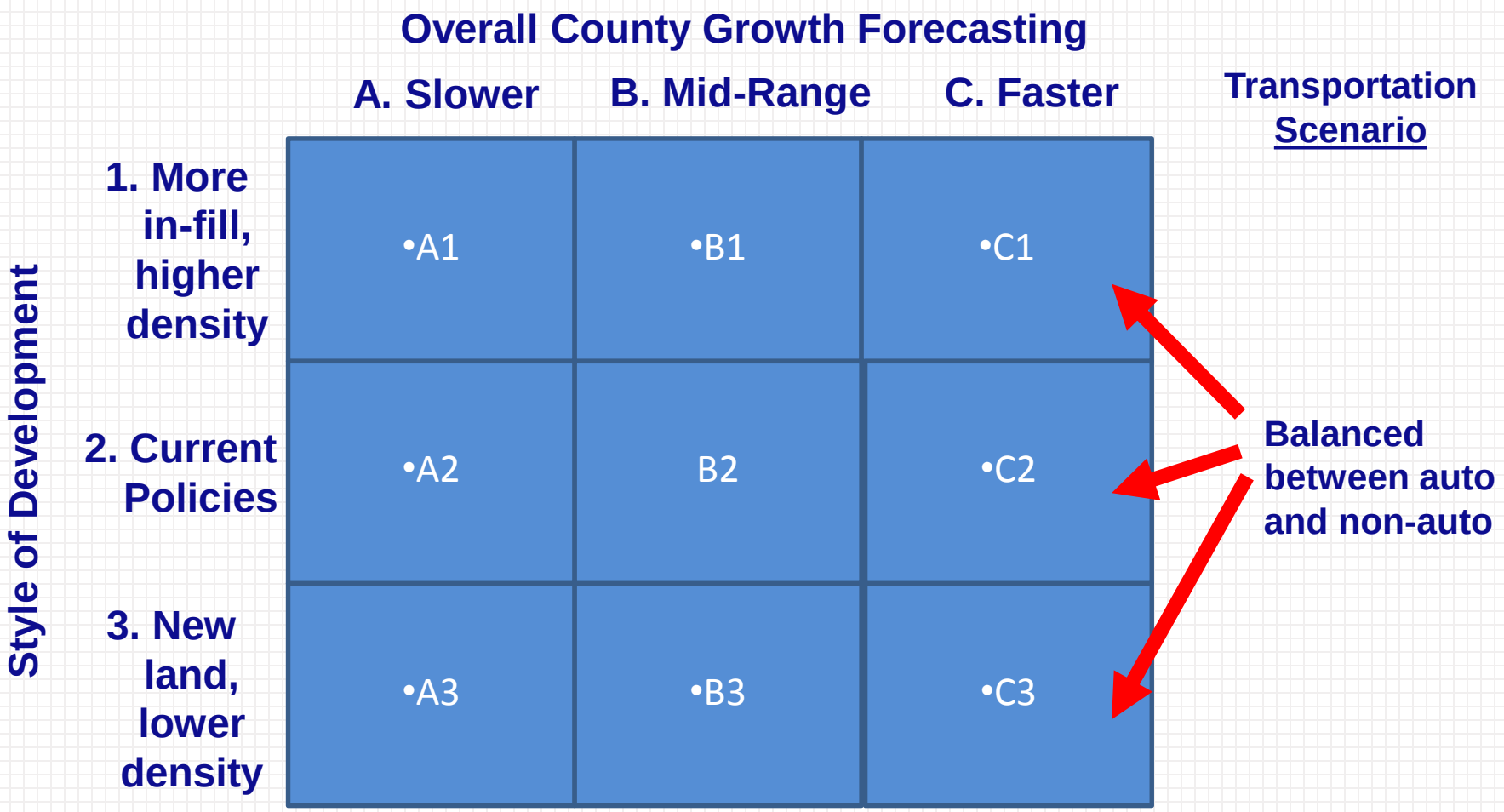
Run E+C (or No-Build) for all growth scenarios



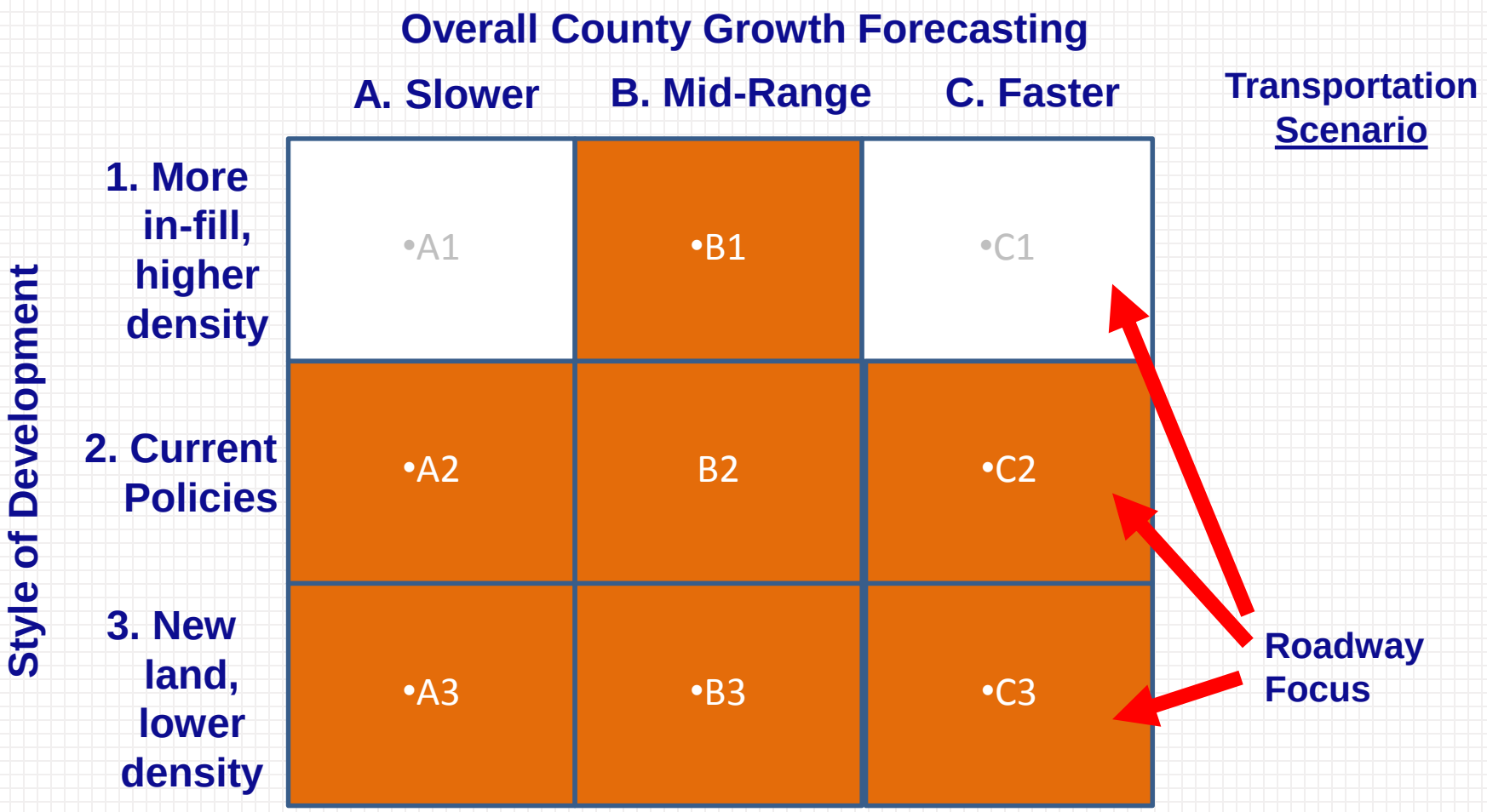
Network Alternative Testing



Network Alternative Testing



Network Alternative Testing



Evaluating Alternatives

Evaluation Process

- Compare each land scenario/network combination with corresponding land scenario/no-build network

No Build/Mid-Range/Current Policies

compares with

Auto Oriented/Mid-Range/Current Policies

Evaluating Alternatives

Identify Specific Capacity Problems

- Roadway links experiencing congestion
- Transit capacity bottlenecks
- Pedestrian conflicts

Quantify Summary Statistics

- Roadway
- Transit
- Non-Motorized

Evaluate Project Alternatives

- User Benefits (net change over no-build)
- Project costs

Evaluating Alternatives

Quantify Summary Statistics

- Roadway
  - Net change in vehicle miles traveled
  - Net change in vehicle hours traveled
  - Net change in roadway delay
  - Net change in peak period speeds
  - Net change in average speeds
  - Net change in accidents
  - Net change in auto occupancy (ride sharing)
  - Auto accessibility
  - Split out for trucks and autos separately

Evaluating Alternatives

Quantify Summary Statistics

- Transit
  - Net change in ridership
  - Net change in transit share
  - Net change in person-hours
  - Transit accessibility

Evaluating Alternatives

Quantify Summary Statistics

- Non-Motorized
  - Net change in non-motorized trips
  - Net change in overall mode share
  - Net change in person-miles
  - Net change in person-hours